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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,614	05/08/2001	Yashwant M. Deo	MXI-166	4957

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EXAMINER	
EWOLDT, GERALD R	
ART UNIT	**PAPER NUMBER**
1644	

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/851,614	DEO ET AL.	
	Examiner	Art Unit	
	G. R. Ewoldt, Ph.D.	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2006 and 22 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *94-107* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *94-107* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed 1/23/06 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's amendment and remarks filed 1/23/06, and the additional remarks filed 2/22/06, have been entered.

2. All previous claims have been canceled.

New Claims 94-107 are pending.

3. In view of Applicant's amendments and remarks canceling all previous claims, all previous rejections have been withdrawn.

4. The following are new grounds of rejection.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 94-107 are rejected under 35 U.S.C. § 112, first paragraph, as the specification does not contain a written description of the claimed invention, in that the disclosure does not reasonably convey to one skilled in the relevant art that the inventor(s) had possession of the claimed invention at the time the application was filed. This is a new matter rejection.

The specification and the claims as originally filed do not provide support for the invention as now claimed, specifically, the recitation of:

A) an isolated human monoclonal antibody, or antigen binding portion thereof, that binds to human dendritic cells, wherein the antibody comprises a human heavy chain variable region comprising FR1, CDR1, FR2, CDR2, FR3, CDR3 and FR4 sequences and a human light chain variable region comprising FR1, CDR1, FR2, CDR2, FR3, CDR3 and FR4 sequences, wherein the heavy chain CDR3 sequence comprises amino acid residues 99-105 of SEQ ID NO:4 or conservative sequence modifications thereof, and the light chain CDR3 sequence comprises amino acid residues 89-97 of SEQ ID NO:2 or conservative sequence modifications thereof (Claim 94),

B) the antibody of Claim 94 further comprising the limitations of Claims 95-98 and 100-107,

C) an isolated human monoclonal antibody, or antigen binding portion thereof, that binds to human dendritic cells, comprising a human heavy chain variable region comprising the amino acid sequence of SEQ ID NO:4, or conservative sequence modifications thereof and a human light chain variable region comprising the amino acid sequence of SEQ ID NO:2, or conservative sequence modifications thereof.

D) the antibody of Claim 99 further comprising the limitations of Claims 100-107,

Regarding A), Applicant's amendment, filed 2/22/06, asserts that support for Claim 94 can be found in the specification at page 15, lines 23-29 and 35, lines 12-19.

The cite at page 15 discloses the definition of an isolated nucleic acid. The cite at page 35 discloses a generic modified antibody and not the specific antibody of the claim.

Regarding B), no specific support has been cited and none has been found. Specifically, the antibody of Claim 95, comprising 2 specific CDR3's and 1 specific CDR 2, is not disclosed in the specification. Neither is the antibody of Claim 96, i.e., an antibody comprising 2 specific CDR3's and 2 specific CDR2's. Likewise, neither the antibody of Claim 97, comprising 2 specific CDR3's, 2 specific CDR2's, and a specific CDR1, nor the antibody of Claim 98, comprising 2 specific CDR3's, 2 specific CDR2's, and 2 specific CDR1's, are disclosed in the specification.

Regarding C), Applicant cites original Claim 51 in support.

Original Claim 51 does not support an antibody comprising conservative sequence modifications.

Regarding D), original Claims 1, 5, 8, and 31, and page 3, lines 1-17 are cited.

The antibody of the original claims was more generic than the antibody of the instant claims, i.e., "an antibody that specifically binds to dendritic cells" versus the now claimed antibody comprising specific SEQ ID NOS. Accordingly, the limitations of the original claims cannot now simply be applied to the antibody of the instant claims without support elsewhere in the specification. Regarding the disclosures at page 3 of the specification, the properties disclosed there are applied only to the "human antibodies of the present invention" and not to the "portion" thereof of the claims. Further, while Claim 101 recites "affinity of at least 10^7M^{-1}, the specification discloses "affinity of at least about 10^7M^{-1}. Finally, none of the limitations of Claims 103 -107 are disclosed at the cite.

7. Claims 94-107 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Under *Vas-Cath, Inc. v. Mahurkar* , 19 USPQ2d 1111, 1117 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in *possession* of the invention, and that the invention, in that context, is whatever is now claimed.

There is insufficient written description to show that Applicant was in possession of:

Any antibodies comprising "conservative modifications" of an antibody comprising SEQ ID NO:2 and SEQ ID NO:4, nor any antibodies, other than an antibody comprising SEQ ID NO:2 and SEQ ID NO:4, comprising the limitations of Claims 100-107.

The claims encompass a potentially unlimited genus of antibodies, just one of which has been disclosed, an antibody

comprising SEQ ID NO:2 and SEQ ID NO:4. Given all of the possible "modified" antibodies of the claims, and all of the possible antibody fragments, i.e., antibody "portions", encompassed by the claims, the skilled artisan would conclude that the claimed genus would likely be large. Indeed, the skilled artisan would note that the claims further encompass antibodies comprising "modified portions" of the disclosed antibody. Accordingly, one of skill in the art would conclude that the specification fails to disclose a representative number of species, i.e., *none*, save the antibody of SEQ ID NO:2 and SEQ ID NO:4, to describe the claimed genus. See *Eli Lilly*, 119 F.3d 1559, 43 USPQ2d 1398.

8. Claims 94-107 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification disclosure is insufficient to enable one skilled in the art to practice the invention as claimed without an undue amount of experimentation. Undue experimentation must be considered in light of factors including: the breadth of the claims, the nature of the invention, the state of the prior art, the level of one of ordinary skill in the art, the level of predictability of the art, the amount of direction provided by the inventor, the existence of working examples, and the quantity of experimentation needed to make or use the invention, see *in re Wands*, 858 F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988).

Regarding novel methods involving biological processes, "The amount of guidance or direction needed to enable the invention is inversely related to the amount of knowledge in the state of the art as well as the predictability in the art." *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). The "amount of guidance or direction" refers to that information in the application, as originally filed, that teaches exactly how to make or use the invention. The more that is known in the prior art about the nature of the invention, how to make, and how to use the invention, and the more predictable the art is, the less information needs to be explicitly stated in the specification. In contrast, if little is known in the prior art about the nature of the invention and the art is unpredictable, the specification would need more detail as to how to make and

use the invention in order to be enabling (MPEP 2164.03)". The MPEP further states that physiological activity can be considered inherently unpredictable.

With these teachings in mind, the instant specification would require a significant disclosure to enable the antibodies of the instant claims. In particular, the specification should demonstrate that the claimed antibodies, defined by as few as 2 CDR's (just 16 amino acid residues), further comprising "conservative sequence modifications", would function as claimed. Note that "conservative sequence modifications" is not defined in the specification, but, as the claims recite no limitations on the number of amino acids that can be "modified", it is clear that the claims encompass antibodies in which all of the amino acids are modified, i.e., amino acids that share 0% homology with the antibody comprising SEQ ID NOS:2 and 4. Looking to the specification for guidance, it is further noted that *no* examples of the claimed antibodies are disclosed. Additionally, it is noted that *no* examples of modified antibodies comprising the limitations of Claims 100-107 are disclosed.

While it may be possible to define an antibody by just its CDR3's, it is clear from the references submitted by Applicant that *at least* the CDR3's must be defined. Given that the instant specification provides no examples of the antibodies of the instant claims, other than B11, and given the fact that the specification does not even discuss any of the parameters and potential pitfalls of antibody engineering, one of ordinary skill in the art must conclude that the specification fails to adequately disclose how to make and use the claimed invention. Thus, the invention is considered to be highly unpredictable and requiring of undue experimentation to practice as claimed.

9. No claim is allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Gerald Ewoldt whose telephone number is (571) 272-0843. The examiner can normally be reached Monday through Thursday from 7:30 am to 5:30 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841.

11. **Please Note**: Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Additionally, the Technology Center receptionist can be reached at (571) 272-1600.

3/18/06

G.R. Ewoldt, Ph.D.
Primary Examiner
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